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# NASA Procedural Requirements

**NPR 8705.3**Effective Date: August 04,  
2003Expiration Date: August 04,  
2009**COMPLIANCE IS MANDATORY**[Printable Format \(PDF\)](#)

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## Subject: Safety and Mission Assurance (SMA) Requirements for Experimental Aerospace Vehicles (EAV) w/ Change 1 (3/30/04)

Responsible Office: Office of Safety and Mission Assurance

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## Preface

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### P.1 Purpose

This NPR implements the requirements of NPD 8700.2, NASA Policy for Safety and Mission Assurance (SMA) for Experimental Aerospace Vehicles (EAV) by providing the procedural requirements for assessing the SMA elements of EAV programs and projects as the basis for SMA flight assessment and/or a recommendation for third-party indemnification.

### P.2 Applicability

- a. This NPR applies to NASA Headquarters and NASA Centers, including Component Facilities, and to the Jet Propulsion Laboratory (JPL) to the extent specified in its contract with NASA.
  - b. This NPR applies to any "Experimental Aerospace Vehicle" as defined by 42 U.S.C. 2458c (d)(3). For the purposes of this NPR, the term EAV includes a vehicle defined in 42 U.S.C. 2458c (d)(3) as: "an object intended to be flown in, or launched into, orbital or suborbital flight for the purpose of demonstrating technologies necessary for a reusable launch vehicle, developed under an agreement between the Administration and a developer." Additionally, the term EAV includes vehicles demonstrating reentry and landing technology in accordance with the above criteria. This NPR applies to the NASA-supported EAV program/projects during all mission phases, from development through postflight/completion.
  - c. Requirements in this NPR are waived for aircraft operating in support of EAV missions at less than Mach 5 and 100,000 feet in altitude. Managers of programs and projects involving vehicles exceeding both parameters shall use this document (Requirement 21055).
  - d. EAV programs/projects may request that the SMA Flight Assessment be issued by the NASA Center SMA Director vice the Associate Administrator for Safety and Mission Assurance.
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1. Requests may be made to the Center SMA Director of the Center that plans to perform the SMA preparations for flight, who shall obtain the concurrence of the Associate Administrator for Safety and Mission Assurance prior to granting the request. (Requirement 21056)
  2. Requests may be made if all of the following conditions apply:
    - i. The program/project is Center-managed (vice Headquarters-managed), and the Associate Administrator for Safety and Mission Assurance does not have a special interest in the program/project.
    - ii. The vehicle is not planned to become human flight rated.
    - iii. Third-party indemnification decision will not be requested.
    - iv. All flights are planned to fly on a single or contiguous Government range under the control of a single Range

Safety Office.

- e. EAV programs/projects that are covered as a part of another Agency-level safety flight certification process (e.g., Space Shuttle) may request that the other process be utilized for SMA flight assessment. These requests are made jointly by the program/project manager with the program manager of the covering program via the Enterprise Associate Administrator to the Associate Administrator for Safety and Mission Assurance.
- f. When indemnification has been requested, this NPR covers only the SMA portion of the indemnification process that determines whether the developer is following SMA procedures and practices that are acceptable to NASA.

### P.3 Authority

- a. 42 U.S.C. 2473(c)(1), Paragraph 203(c) (1) of the National Aeronautics and Space Act of 1958, as amended.
- b. 42 U.S.C. 2458c(b)(2)(D), section 309 of the National Aeronautics and Space Act of 1958, as amended.

### P.4 References

- a. 14 CFR Chapter III, Commercial Space Transportation, Federal Aviation Administration, Department of Transportation.
- b. National Security Telecommunications and Information Systems Security (NSTISS) Policy Number 12, National Information Assurance (IA) Policy for U.S. Space Systems.
- c. NPD 1000.1, NASA Strategic Plan.
- d. NPD 7120.4, Program/Project Management.
- e. NPR 8621.1, NASA Procedural Requirements for Mishap Reporting, Investigating, and Recordkeeping.
- f. NPD 8700.1, NASA Policy for Safety and Mission Success.
- g. NPD 8700.2, NASA Policy for Safety and Mission Assurance (SMA) for Experimental Aerospace Vehicles (EAV).
- h. NPD 8710.3, NASA Policy for Limiting Orbital Debris Generation.
- i. NPD 8720.1, NASA Reliability and Maintainability (R&M) Program Policy.
- j. NPD 8730.4, Software Independent Verification and Validation (IV&V) Policy.
- k. NPR 1441.1, NASA Records Retention Schedule.
- l. NPR 2810.1, Security of Information Technology.
- m. NPR 7120.5, NASA Program and Project Management Processes and Requirements.
- n. NPR 7900.3, Aircraft Operations Management.
- o. NPR 8000.4, Risk Management Procedural Requirements.
- p. NPR 8705.2, Human Rating Requirements for Space Flight Systems.
- q. NPR 8715.3, NASA Safety Manual.
- r. NPR 8735.2, Management of Government Safety and Mission Assurance Surveillance Functions for NASA Contracts.
- s. NSS 1740.14, Guidelines and Assessment Procedures for Limiting Orbital Debris.
- t. Reserved
- u. NSTS 1700.7, Safety Policy and Requirements for Payloads Using the Space Transportation System.
- v. NSTS/ISS 13830, Payload Safety Review and Data Submittal Requirements.
- w. SSP 30324, Failure Modes, Effects, and Criticality Analysis.
- x. SSP 30599, Safety Review Process.
- y. SSP 30695, Acceptance Data Package Requirements.
- aa. SSP 50004, Support Equipment Design Requirements.
- ab. SSP 50021, Safety Requirements Document for International Space Station.
- ac. SSP 50231, SMA Certification of Flight Readiness Implementation Plan.
- ad. Eastern and Western Range (EWR) 127-1, Range Safety Requirements.
- ae. Range Commanders Council Document 319-99, Flight Termination Systems - Commonality Standard.

- ae. Range Commanders Council Document 321-02, Common Risk Criteria for National Test Ranges, Inert Debris.
- af. Range Commanders Council Document 323-32, Range Safety Criteria for Unmanned Air Vehicles.
- ag. United States General Accounting Office Testimony, Space Transportation: Critical Areas NASA Needs to Address in Managing Its Reusable Launch Vehicle Program, (GAO-01-825T), June 20, 2001.
- ah. American National Standards Institute (ANSI)/American Institute of Aeronautics and Astronautics (AIAA) S-080-1998, Space Systems - Metallic Pressure Vessels, Pressurized Structures, and Pressure Components.

## P.5 Cancellation

None

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**/s/ Bryan O'Connor**  
**Associate Administrator for Safety and Mission Assurance**

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